Fiber-Loop Optical-Microwave Phase Detector (FLOM-PD)

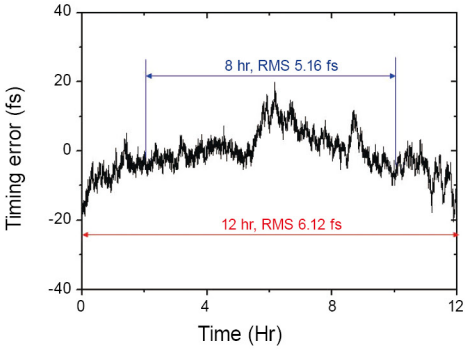
PD2000

FIBERPRO's Fiber Loop Optical Microwave Phase Detector (FLOM-PD, PD2000) is a high-performance phase detection and synchronization system that enables stable performance transmission between optical signals and RF signal areas.

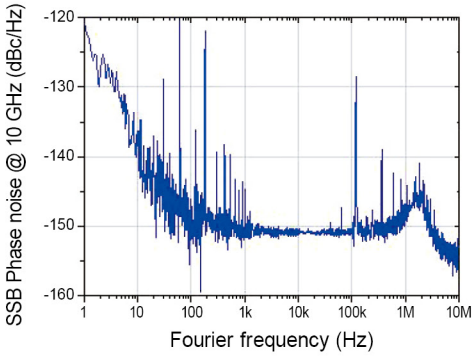
Features

- High Sensitivity : 0.5 mV/fs
- High Resolution : < 0.1 fs
- Ultra Low Timing Jitter : < 7 fs
- Super Wide Locking Bandwidth : > 2,000 kHz
- Ultra Low SSB Phase Noise : ~ - 150 dBc/Hz
- USB remote interface

Measurement Data



Out-of-loop Timing Drift between Optical Pulses and RF-reference.



Out-of-loop Phase Noise Spectrum

FIBERPRO

Applications

- Ultrasensitive timing jitter measurement between ultrafast lasers and RF signals
- Precise synchronization between ultrafast lasers and RF signals
- Precise synchronization of RF signals to the output of stabilized fiber links
- Synchronization of external Voltage Controlled Oscillators (VCO)

Specifications

Model	**PD2000**	**PD2100** [1]
Detector Sensitivity	0.5 mV/fs [2]	
Detector Resolution	< 0.10 fs	
Control System	Included	
Auto Lock	Included [3]	Included
VCO	Not Included	Included
Timing Jitter	< 7 fs RMS (12 hours)	
Bandwidth of Error Signal	> 10 MHz	
Locking Bandwidth	> 2,000 kHz	
Output Impedance	50 Ω	
VCO frequency	None	10 GHz [4]
RF Output Power	None	12 dBm
RF Connector	SMA	
Error Signal Output Connector	SMA	
Loop Filter	Included	
Power Supply	AC 100 ~ 240 V (50/60 Hz)	
Dimensions (W x D x H)	234 mm x 410 mm x 108 mm (With rubber cover) 212 mm x 380 mm x 86 mm (Without rubber cover)	
Requirements		
RF Input Power	> 12 dBm	None
Optical Input Wavelength	1550 nm ± 40 nm	
Optical Input Power	> 13 dBm	
Optical Input Type	PM Fiber	
Pulse Repetition Rate	< 10 GHz	

1) PD2000 + VCO
2) At 14 dBm optical input.
3) For the case when external RF source is used.
4) Other frequencies are available. Specify when you order.
* Above specifications are subjected to change without prior notice.

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